SEQUENCE LISTING

						SEQU	EWCE.	DIO	11110								
<110>																	
<120>		THOD CEPT		R ID	ENTI	FYIN	G MO	DULA	TORS	OF	ACTI	VE K	CIT T	YROS	SINE	KINAS	E ·
<130>	30	694/	3961	.8A													
<150> <151>			526, 2-04														
<160>	6																
<170>	Pa	tent	:In v	rersi	ion 3	3.2											
<210> <211> <212> <213>	50 D1		sapie	ens													
<220><221><222>	CI		. (29	52)													
-400>	. 1	·															
gated	ccat	cg c	agct	accg		atg Met 1	aga Arg	ggc Gly	gct Ala	cgc Arg 5	ggc (gcc Ala	tgg Trp	gat Asp	ttt Phe 10		51
ctc t Leu (gc Cys	gtt Val	Leu	ctc Leu 15	cta Leu	ctg Leu	ctt Leu	cgc Arg	gtc Val 20	cag Gln	aca Thr	ggc Gly	tct Ser	tct Ser 25	caa Gln		99
cca t Pro s	tct Ser	gtg Val	agt Ser 30	cca Pro	gly ggg	gaa Glu	ccg Pro	tct Ser 35	cca Pro	cca Pro	tcc Ser	atc Ile	cat His 40	cca Pro	gga Gly		147
aaa Lys	tca Ser	gac Asp 45	tta Leu	ata Ile	gtc Val	cgc Arg	gtg Val 50	ggc	gac Asp	gag Glu	att Ile	agg Arg 55	çtg Leu	tta Leu	tgc Cys		195
Thr .	gat Asp 60	ccg Pro	ggc Gly	ttt Phe	gtc Val	aaa Lys 65	tgg Trp	act Thr	ttt Phe	gag Glu	atc Ile 70	ctg Leu	gat Asp	gaa Glu	acg Thr		243
aat Asn 75	gag Glu	aat Asn	aag Lys	cag Gln	aat Asn 80	gaa Glu	tgg Trp	atc Ile	acg Thr	gaa Glu 85	aag Lys	gca Ala	gaa Glu	gcc Ala	acc Thr 90		291
aac Asn	acc Thr	ggc Gly	aaa Lys	tac Tyr 95	acg Thr	tgc Cys	acc Thr	aac Asn	aaa Lys 100	cac His	ggc	tta Leu	agc Ser	aat Asn 105	Ser		339
att Ile	tat Tyr	gtg Val	ttt Phe 110	gtt Val	aga Arg	gat Asp	cct Pro	gcc Ala 115	. Lys	ctt Leu	ttc Phe	ctt Leu	gtt Val 120	Asp	cgc Arg		387
tcc Ser	ttg Leu	tat Tyr 125	Gly 999	aaa Lys	gaa Glu	gac Asp	aac Asn 130	Asp	acg Thr	ctg Leu	gtc Val	cgc Arg 135	Cys	cct Pro	cto Leu	! L	435
aca	gac	cca	gaa	gtg	acc	aat	tat	tec	ctc	aag	999	tgo	cag	999	g aag	ſ	483

Thr	Asp 140	Pro	Glu	Val		Asn 145	Tyr	Ser	Leu	гÀг	Gly 150	Cys	Gln	Gly	Lys	
cct Pro 155	ctt Leu	ccc Pro	aag Lys	gac Asp	ttg Leu 160	agg Arg	ttt Phe	att Ile	cct Pro	gac Asp 165	ccc Pro	aag Lys	gcg Ala	ggc Gly	atc Ile 170	531
atg Met	atc Ile	aaa Lys	agt Ser	gtg Val 175	aaa Lys	ege Arg	gcc Ala	tac Tyr	cat His 180	cgg Arg	ctc Leu	tgt Cys	ctg Leu	cat His 185	tgt Cys	579
tct Ser	gtg Val	gac Asp	cag Gln 190	gag Glu	ggc Gly	aag Lys	tca Ser	gtg Val 195	ctg Leu	tcg Ser	gaa Glu	aaa Lys	ttc Phe 200	atc Ile	ctg Leu	627
aaa Lys	gtg Val	agg Arg 205	cca Pro	gcc Ala	ttc Phe	aaa Lys	gct Ala 210	gtg Val	cct Pro	gtt Val	gtg Val	tct Ser 215	gtg Val	tcc Ser	aaa Lys	675
gca Ala	agc Ser 220	tat Tyr	ctt Leu	ctt Leu	agg Arg	gaa Glu 225	gjå aaa	gaa Glu	gaa Glu	ttc Phe	aca Thr 230	gtg Val	acg Thr	tgc Cys	aca Thr	723
ata Ile 235	Lys	gat Asp	gtg Val	tct Ser	agt Ser 240	tct Ser	gtg Val	tac Tyr	tca Ser	acg Thr 245	\mathtt{Trp}	aaa Lys	aga Arg	gaa Glu	aac Asn 250	771
agt Ser	cag Gln	act Thr	aaa Lys	cta Leu 255	cag Gln	gag Glu	aaa Lys	tat Tyr	aat Asn 260	agc Ser	tgg Trp	cat His	cac His	ggt Gly 265	Asp	819
ttc Phe	aat Asn	tat Tyr	gaa Glu 270	Arg	cag Gln	gca Ala	acg Thr	ttg Leu 275	Thr	atc Ile	agt Ser	tca Ser	gcg Ala 280	aga Arg	gtt Val	867
aat Asr	gat Asp	tct Ser 285	Gly	gtg Val	ttc Phe	atg Met	tgt Cys 290	Tyr	gcc Ala	aat Asn	aat Asr	act Thr 295	Phe	gga Gly	tca Ser	915
gca Ala	aat Asn 300	. Val	aca Thr	aca Thr	acc Thr	ttg Leu 305	Glu	gta Val	ı gta . Val	gat Asp	aaa Lys 310	Gly	ttc Phe	att Ile	aat Asn	963
ato Ile 315	e Phe	ccc Pro	ato Met	g ata : Ile	aac Asn 320	Thr	aca Thr	gta Val	ttt Phe	gta Val	. Ası	gat n Asp	gga Gly	gaa Glu	a aat 1 Asn 330	1011
gta Val	a gat L Asp	tto Lev	g att i Ile	gtt Val	. Glu	tat Tyr	gaa Glu	a gca a Ala	a tto a Phe 340	Pro	aaa Lys	a cct s Pro	gaa Glu	cac His 345	c cag s Gln	1059
caq Gl:	g tgg n Trp	g ato	tate Type 350	. Met	aac Asr	aga Arg	aco Thi	tto Phe 35	e Thi	gat As <u>r</u>	c aaa o Lys	a tgg s Trp	g gaa Glu 360	ı Ası	tat o Tyr	1107
cc. Pr	c aag o Ly:	g tot s Sei 36!	c Gli	g aat ı Ası	gaa Glu	ı agt ı Ser	aat Ası 370	n Ile	c aga	a tad	c gta	a agt 1 Set 37!	c GII	a cti 1 Lei	t cat u His	1155
ct: Le	a acg u Th: 38	r Ar	a tta g Le	a aaa u Ly:	a ggo s Gly	t acc 7 Thi 385	: Gl	a gga u Gl	a ggo y Gl	c act	t ta r Ty 39	r Th	a tto	c cta e Le	a gtg u Val	1203

tcc aat t Ser Asn S	ct gac Ser Asp	gtc aa Val As 40	n Ala	gcc a Ala I	ta g le A	Ta F	et aa ne As 05	at gt sn Va	t ta 1 Ty	t gt r Va		at sn 10	1251
aca aaa d Thr Lys I	cca gaa Pro Glu	atc ct Ile Le 415	g act u Thr	tac g Tyr A	Asp A	gg c rg L 20	tc gi eu Va	tg aa al As	at gg sn Gl	gc at y Me 42		tc eu	1299
caa tgt (Gln Cys \	gtg gca Val Ala 430	Ala G	ga ttc .y Phe	Pro (gag c Glu F 135	cc a Pro T	ca a hr I	ta ga le As	PD TT	gg ta Cp Ty 10	at t /r P	tt he	1347
tgt cca (Cys Pro	gga act Gly Thr 445	gag ca Glu G	ag aga In Arg	tgc t Cys 5	tct g Ser <i>P</i>	gct t Ala S	ct g er V	ar no	tg co eu Pi 55	ca gt ro Va	ig g	gat Asp	1395
gtg cag Val Gln 460	aca cta Thr Lev	aac t Asn S	ca tct er Ser 465	$\mathbf{G}\mathbf{T}\mathbf{\lambda}$	cca (Pro 1	ccg t Pro E	ne G	ga a ly L 70	ag ci ys L	ta gʻ eu Va	tg g al V	gtt Val	1443
cag agt Gln Ser 475	tct ata Ser Ile	e Asp S	ct agt er Ser 80	gca	ttc : Phe :	гаг Г	cac a His <i>P</i> 185	at g Asn G	gc a ly T	cg g hr V	aı (gaa Glu 490	1491
tgt aag Cys Lys	gct tac Ala Ty:	c aac g r Asn A 495	at gtg sp Val	. Gly	гля	act t Thr :	tct g Ser <i>l</i>	gcc t Ala T	at t Yr P	110 11	ac i sn i	ttt Phe	1539
gca ttt Ala Phe	aaa gg Lys Gl	y Asn <i>P</i>	ac aaa sn Lys	a gag 3 Glu	caa Gln 515	atc Ile	cat o	ccc c Pro H	110 1	icc c hr L	tg eu	ttc Phe	1587
act cct Thr Pro	ttg ct Leu Le 525	g att g u Ile (gt tto Bly Pho	gta val 530	atc Ile	gta Val	gct (Ala	GTA 1.	atg a Met N 535	atg t Met C	gc gc	att Ile	1635
att gtg Ile Val 540	Met Il	t ctg a e Leu '	acc ta Thr Ty 54	r Lys	tat Tyr	tta Leu	GIII	aaa d Lys I 550	ccc a Pro N	atg t Met :	cat Tyr	gaa Glu	1683
gta cag Val Gln 555	tgg aa Trp Ly	rs Val	gtt ga Val Gl 560	g gag u Glu	ata Ile	aat Asn	gga Gly 565	aac a Asn i	aat i Asn i	tat q Tyr '	gtt Val	tac Tyr 570	1731
ata gad Ile Asp	cca ac Pro Th	ca caa nr Gln 575	ctt cc Leu Pr	t tat o Tyr	gat Asp	cac His 580	aaa Lys	tgg (Trp (gag Glu	FIIC	ccc Pro 585	aga Arg	1779
aac agg Asn Arg	Leu Se	gt ttt er Phe 90	ggg aa Gly Ly	a acc rs Thr	ctg Leu 595	. Сту	gct Ala	gga Gly	gct Ala	ttc Phe 600	gly aaa	aag Lys	1827
gtt gtt Val Val	gag g Glu A 605	ca act la Thr	gct ta Ala Ty	it ggo r Gly 610	, пеп	att Ile	aag Lys	tca Ser	gat Asp 615	gcg Ala	gcc Ala	atg Met	1875
act gto Thr Val	l Ala V	ta aag al Lys	Met L	c aag eu Lys 25	g ccg B Pro	g agt Ser	gcc Ala	cat His 630	ttg Leu	aca Thr	gaa Glu	cgg Arg	1923
gaa gc Glu Ala 635	c ctc a a Leu M	tg tct et Ser	gaa c Glu L 640	cc aaa eu Lys	a gto s Val	c ctg l Leu	agt Ser 645	TAT	ctt Leu	ggt Gly	aat Asn	cac His 650	1971

atg Met	aat Asn	att Ile	gtg Val	aat Asn 655	cta Leu	ctt Leu	gga Gly	gcc Ala	tgc Cys 660	acc Thr	att Ile	gga Gly	gly aaa	ccc Pro 665	acc Thr	2019
ctg Leu	gtc Val	att Ile	aca Thr 670	gaa Glu	tat Tyr	tgt Cys	tgc Cys	tat Tyr 675	ggt Gly	gat Asp	ctt Leu	ttg Leu	aat Asn 680	ttt Phe	ttg Leu	2067
aga Arg	aga Arg	aaa Lys 685	cgt Arg	gat Asp	tca Ser	ttt Phe	att Ile 690	tgt Cys	tca Ser	aag Lys	cag Gln	gaa Glu 695	gat Asp	cat His	gca Ala	2115
gaa Glu	gct Ala 700	gca Ala	ctt Leu	tat Tyr	aag Lys	aat Asn 705	ctt Leu	ctg Leu	cat His	tca Ser	aag Lys 710	gag Glu	tct Ser	tcc Ser	tgc Cys	2163
agc Ser 715	gat Asp	agt Ser	act Thr	aat Asn	gag Glu 720	tac Tyr	atg Met	gac Asp	atg Met	aaa Lys 725	cct Pro	gga Gly	gtt Val	tct Ser	tat Tyr 730	2211
gtt Val	gtc Val	cca Pro	acc Thr	aag Lys 735	gcc Ala	gac Asp	aaa Lys	agg Arg	aga Arg 740	tct Ser	gtg Val	aga Arg	ata Ile	ggc Gly 745	tca Ser	2259
tac Tyr	ata Ile	gaa Glu	aga Arg 750	gat Asp	gtg Val	act Thr	ccc Pro	gcc Ala 755	atc Ile	atg Met	gag Glu	gat Asp	gac Asp 760	gag Glu	ttg Leu	2307
gcc Ala	cta Leu	gac Asp 765	Leu	gaa Glu	gac Asp	ttg Leu	ctg Leu 770	agc Ser	ttt Phe	tct Ser	tac Tyr	cag Gln 775	gtg Val	gca Ala	aag Lys	2355
ggc	atg Met 780	Ala	ttc Phe	ctc Leu	gcc Ala	tcc Ser 785	aag Lys	aat Asn	tgt Cys	att Ile	cac His 790	Arg	gac Asp	ttg Leu	gca Ala	2403
gcc Ala 795	Arg	aat Asn	atc Ile	ctc Leu	ctt Leu 800	Thr	cat His	ggt Gly	cgg	atc Ile 805	aca Thr	aag Lys	att Ile	tgt Cys	gat Asp 810	2451
ttt Phe	ggt Gly	cta Leu	gcc Ala	aga Arg 815	ı Asp	atc Ile	aag Lys	aat Asn	gat Asp 820	Ser	aat Asn	tat Tyr	gtg Val	gtt Val 825	aaa Lys	2499
Gl)	a aac / Asr	gct Ala	cga Arg 830	, Lev	cct Pro	gtg Val	aag Lys	tgg Trp 835) Met	gca Ala	cct Pro	gaa Glu	ago Ser 840	. TTE	ttc Phe	2547
aac Asr	tgt 1 Cys	gta Val 845	. Туг	ace Thr	ttt Phe	gaa Glu	agt Ser 850	: Asr	gto Val	tgg Trp	tco Ser	tat Tyr 855	GTA	att Ile	ttt Phe	2595
ctt Le:	tgg Trp 860	Glu	g ctg 1 Leu	g tto 1 Phe	c tct e Ser	tta Lev 865	ı Gly	a ago 7 Sei	ago Ser	e ccc	tat Ty: 870	r Pro	gga Gly	ato Met	g ccg : Pro	2643
gt: Va: 87!	l Ası	tct Sei	aag Lys	g tto B Phe	tac Tyr 880	Lys	g ato Met	g ato	aag E Lys	g gaa Glu 889	ı GT	tto Y Phe	c cgg Arg	g ato g Met	g ctc Leu 890	2691
age Se:	c cct r Pro	gaa Glu	a cad ı His	gca s Ala 89!	a Pro	get Ala	gaa a Glu	a ato 1 Mei	g tat t Tyr 900	: Asr	ata o Ile	a ato e Met	g aag Lys	g act s Thi 909	tgc Cys	2739

tgg gat gca gat ccc cta aaa aga cca aca ttc aag caa att gtt cag Trp Asp Ala Asp Pro Leu Lys Arg Pro Thr Phe Lys Gln Ile Val Gln 910 915 920	2787
cta att gag aag cag att tca gag agc acc aat cat att tac tcc aac Leu Ile Glu Lys Gln Ile Ser Glu Ser Thr Asn His Ile Tyr Ser Asn 925 930 935	2835
tta gca aac tgc agc ccc aac cga cag aag ccc gtg gta gac cat tct Leu Ala Asn Cys Ser Pro Asn Arg Gln Lys Pro Val Val Asp His Ser 940 945 950	2883
gtg cgg atc aat tct gtc ggc agc acc gct tcc tcc tcc cag cct ctg Val Arg Ile Asn Ser Val Gly Ser Thr Ala Ser Ser Gln Pro Leu 955 960 965 970	2931
ctt gtg cac gac gat gtc tga gcagaatcag tgtttgggtc accectccag Leu Val His Asp Asp Val 975	2982
gaatgatete ttettttgge ttecatgatg gttattttet tttettteaa ettgeateea	3042
actccaggat agtgggcacc ccactgcaat cctgtctttc tgagcacact ttagtggccg	3102
atgatttttg tcatcagcca ccatcctatt gcaaaggttc caactgtata tattcccaat	3162
agcaacgtag cttctaccat gaacagaaaa cattctgatt tggaaaaaga gagggaggta	3222
tggactgggg gccagagtcc tttccaaggc ttctccaatt ctgcccaaaa atatggttga	3282
tagtttacct gaataaatgg tagtaatcac agttggcctt cagaaccatc catagtagta	3342
tgatgataca agattagaag ctgaaaacct aagteettta tgtggaaaac agaacatcat	3402
tagaacaaag gacagagtat gaacacctgg gcttaagaaa tctagtattt catgctggga	3462
atgagacata ggccatgaaa aaaatgatcc ccaagtgtga acaaaagatg ctcttctgtg	3522
gaccactgca tgagctttta tactaccgac ctggttttta aatagagttt gctattagag	3582
cattgaattg gagagaagge cteectagee ageaettgta tatacgeate tataaattgt	3642
ccgtgttcat acatttgagg ggaaaacacc ataaggtttc gtttctgtat acaaccctgg	3702
cattatgtcc actgtgtata gaagtagatt aagagccata taagtttgaa ggaaacagtt	3762
aataccattt tttaaggaaa caatataacc acaaagcaca gtttgaacaa aatctcctct	3822
tttagctgat gaacttattc tgtagattct gtggaacaag cctatcagct tcagaatggc	3882
attgtactca atggatttga tgctgtttga caaagttact gattcactgc atggctccca	3942
caggagtggg aaaacactgc catcttagtt tggattctta tgtagcagga aataaagtat	4002
aggtttagcc tccttcgcag gcatgtcctg gacaccgggc cagtatctat atatgtgtat	4062
gtacgtttgt atgtgtgtag acaaatattt ggaggggtat ttttgccctg agtccaagag	4122
ggtcctttag tacctgaaaa gtaacttggc tttcattatt agtactgctc ttgtttcttt	4182
tcacatagct gtctagagta gcttaccaga agcttccata gtggtgcaga ggaagtggaa	4242
ggcatcagtc cctatgtatt tgcagttcac ctgcacttaa ggcactctgt tatttagact	4302
ggcaccagee cocaegeace egoageacad objects and ggeneral g	

catcttactg tacctgttcc ttagaccttc cataatgcta ctgtctcact gaaacattta 4362 aattttaccc tttagactgt agcctggata ttattcttgt agtttacctc tttaaaaaca 4422 aaacaaaaca aaacaaaaaa ctccccttcc tcactgccca atataaaagg caaatgtgta 4482 catggcagag tttgtgtgtt gtcttgaaag attcaggtat gttgccttta tggtttcccc 4542 cttctacatt tcttagacta catttagaga actgtggccg ttatctggaa gtaaccattt 4602 4662 cacccaagag attgttgttt gccatacttt gtctgaaaaa ttcctttgtg tttctattga 4722 cttcaatgat agtaagaaaa gtggttgtta gttatagatg tctaggtact tcaggggcac 4782 ttcattgaga gttttgtctt gccatacttt gtctgaaaaa ttcctttgtg tttctattga 4842 cttcaatgat agtaagaaaa gtggttgtta gttatagatg tctaggtact tcaggggcac 4902 ttcattgaga gttttgtcaa tgtcttttga atattcccaa gcccatgagt ccttgaaaat 4962 attttttata tatacagtaa ctttatgtgt aaatacataa gcggcgtaag tttaaaggat 5022 gttggtgttc cacgtgtttt attcctgtat gttgtccaat tgttgacagt tctgaagaat 5082 5084 tc

<211> 976 <212> PRT <213> Homo sapiens <220>

sig_peptide

(1)..(22)

2

<400> 2

<221>

<222>

<210>

Met Arg Gly Ala Arg Gly Ala Trp Asp Phe Leu Cys Val Leu Leu Leu 1 5 10 15

Leu Leu Arg Val Gln Thr Gly Ser Ser Gln Pro Ser Val Ser Pro Gly
20 25 30

Glu Pro Ser Pro Pro Ser Ile His Pro Gly Lys Ser Asp Leu Ile Val 35 40 45

Arg Val Gly Asp Glu Ile Arg Leu Leu Cys Thr Asp Pro Gly Phe Val 50 55 60

Lys Trp Thr Phe Glu Ile Leu Asp Glu Thr Asn Glu Asn Lys Gln Asn 65 70 75 80

Glu Trp Ile Thr Glu Lys Ala Glu Ala Thr Asn Thr Gly Lys Tyr Thr 85 90 95

Cys Thr Asn Lys His Gly Leu Ser Asn Ser Ile Tyr Val Phe Val Arg

- Asp Pro Ala Lys Leu Phe Leu Val Asp Arg Ser Leu Tyr Gly Lys Glu 115 120 125
- Asp Asn Asp Thr Leu Val Arg Cys Pro Leu Thr Asp Pro Glu Val Thr 130 135 140
- Asn Tyr Ser Leu Lys Gly Cys Gln Gly Lys Pro Leu Pro Lys Asp Leu 145 150 155 160
- Arg Phe Ile Pro Asp Pro Lys Ala Gly Ile Met Ile Lys Ser Val Lys 165 170 175
- Arg Ala Tyr His Arg Leu Cys Leu His Cys Ser Val Asp Gln Glu Gly 180 185 190
- Lys Ser Val Leu Ser Glu Lys Phe Ile Leu Lys Val Arg Pro Ala Phe 195 200 205
- Lys Ala Val Pro Val Val Ser Val Ser Lys Ala Ser Tyr Leu Leu Arg 210 215 220
- Glu Gly Glu Glu Phe Thr Val Thr Cys Thr Ile Lys Asp Val Ser Ser 225 230 235
- Ser Val Tyr Ser Thr Trp Lys Arg Glu Asn Ser Gln Thr Lys Leu Gln 245 250 255
- Glu Lys Tyr Asn Ser Trp His His Gly Asp Phe Asn Tyr Glu Arg Gln 260 265 . 270
- Ala Thr Leu Thr Ile Ser Ser Ala Arg Val Asn Asp Ser Gly Val Phe 275 280 285
- Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val Thr Thr Thr 290 295 300
- Leu Glu Val Val Asp Lys Gly Phe Ile Asn Ile Phe Pro Met Ile Asn 305 310 315
- Thr Thr Val Phe Val Asn Asp Gly Glu Asn Val Asp Leu Ile Val Glu 325 330 335
- Tyr Glu Ala Phe Pro Lys Pro Glu His Gln Gln Trp Ile Tyr Met Asn 340 345 . 350

Arg Thr Phe Thr Asp Lys Trp Glu Asp Tyr Pro Lys Ser Glu Asn Glu 355 360 365

- Ser Asn Ile Arg Tyr Val Ser Glu Leu His Leu Thr Arg Leu Lys Gly 370 375 380
- Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser Asp Val Asn 385 390 395
- Ala Ala Ile Ala Phe Asn Val Tyr Val Asn Thr Lys Pro Glu Ile Leu 405 410 415
- Thr Tyr Asp Arg Leu Val Asn Gly Met Leu Gln Cys Val Ala Ala Gly 420 425 430
- Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Pro Gly Thr Glu Gln 435 440 445
- Arg Cys Ser Ala Ser Val Leu Pro Val Asp Val Gln Thr Leu Asn Ser 450 455 460
- Ser Gly Pro Pro Phe Gly Lys Leu Val Val Gln Ser Ser Ile Asp Ser 465 470 475 480
- Ser Ala Phe Lys His Asn Gly Thr Val Glu Cys Lys Ala Tyr Asn Asp 485 490 495
- Val Gly Lys Thr Ser Ala Tyr Phe Asn Phe Ala Phe Lys Gly Asn Asn 500 505 510
- Lys Glu Gln Ile His Pro His Thr Leu Phe Thr Pro Leu Leu Ile Gly 515 520 525
- Phe Val Ile Val Ala Gly Met Met Cys Ile Ile Val Met Ile Leu Thr 530 540
- Tyr Lys Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys Val Val 545 550 555 560
- Glu Glu Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr Gln Leu 565 570 575
- Pro Tyr Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser Phe Gly 580 585 590
- Lys Thr Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala Thr Ala 595 600 605

Tyr Gly Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val Lys Met 610 620

Leu Lys Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met Ser Glu 625 630 635 640

Leu Lys Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val Asn Leu 645 650 655

Leu Gly Ala Cys Thr Ile Gly Gly Pro Thr Leu Val Ile Thr Glu Tyr 660 665 670

Cys Cys Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg Asp Ser 675 680 685

Phe Ile Cys Ser Lys Gln Glu Asp His Ala Glu Ala Ala Leu Tyr Lys 690 695 700

Asn Leu Leu His Ser Lys Glu Ser Ser Cys Ser Asp Ser Thr Asn Glu 705 710 715 720

Tyr Met Asp Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys Ala 725 730 735

Asp Lys Arg Arg Ser Val Arg Ile Gly Ser Tyr Ile Glu Arg Asp Val 740 745 750

Thr Pro Ala Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Glu Asp 755 760 765

Leu Leu Ser Phe Ser Tyr Gln Val Ala Lys Gly Met Ala Phe Leu Ala 770 775 780

Ser Lys Asn Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Leu 785 790 795 800

Thr His Gly Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp 805 810

Ile Lys Asn Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu Pro 820 825 830

Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asn Cys Val Tyr Thr Phe 835 840 845

Glu Ser Asp Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe Ser 850 855 860

Leu 865	Gly	Ser	Ser	Pro	Tyr 870	Pro	Gly	Met	Pro	Val 875	Asp	Ser	Lys	Phe	Tyr 880	
Lys	Met	Ile	Lys	Glu 885	Gly	Phe	Arg	Met	Leu 890	Ser	Pro	Glu	His	Ala 895	Pro	
Ala	Glu	Met	Tyr 900	Asp	Ile	Met	Lys	Thr 905	Cys	Trp	Asp	Ala	Asp 910	Pro	Leu	
Lys	Arg	Pro 915	Thr	Phe	Lys	Gln	Ile 920	Val	Gln	Leu	Ile	Glu 925	Lys	Gln	Ile	
Ser	Glu 930		Thr	Asn	His	Ile 935	Tyr	Ser	Asn	Leu	Ala 940	Asn	Cys	Ser	Pro	
Asn 945		Gln	Lys	Pro	Val 950	Val	Asp	His	Ser	Val 955	Arg	Ile	Asn	Ser	Val 960	
Gly	Ser	Thr	Ala	Ser 965		Ser	Gln	Pro	Leu 970	Leu	ı Val	. His	a Asp	Asp 975	Val	
		3 5132 DNA Mus		ulus	ı											
	20> 21> 22>	CDS (29)	(2	2956)												
<4(gag	00> gata	3 agag	tcta	agcgo	cag o	caco	geg	atg Met 1	aga Arg	ggc Gly	gct Ala	cgc Arg 5	ggc	gcc Ala	tgg Trp	52
ga [†] Asj	t cto p Leo 10	g cto u Leo	c tgo u Cys	c gto s Vai	c ctg l Lei	g ttg 1 Lei 15	g gte 1 Va	c cto	g cto	c cg u Ar	t gg g Gl 20	λ GT.	g ac n Th	a gc r Al	c acc a Thr	g 100
tc Se 25	r Gl	g cc n Pr	a tc o Se:	t gcar	a agi a Se: 30	t cca	a gg	g ga	g cc u Pr	g tc o Se 35	r PI	g cc o Pr	a tc o Se	c at r Il	c cat e His 40	t 148 s
cc Pr	a gc o Al	a ca a Gl	a tc n Se	a ga r Gl 45	g tt u Le	a ata u Ilo	a gt e Va	t ga 1 Gl	a gc u Al 50	a GI	c ga y As	c ac p Th	c ct r Le	c ag u Se 55	c cto r Lei	g 196 u
ac Th	g tg r Cy	c at s Il	t ga e As 60	p Pr	c ga o As	c tt p Ph	t gt e Va	c ag il Ar 65	g Tr	g ac p Th	t tt ir Ph	c aa ne Ly	g ac rs Th 70	т. т	t tte r Ph	c 244 e
aa As	t ga n Gl	a at u Me	t Va	t ga 1 Gl	g aa u As	t aa n Ly	a aa s Ly 80	rs As	t ga n Gl	ia to .u Tr	gg at p Il	.c ca .e G] 85	n Gi	a aa u Ly	a gc /s Al	с 292 а

gag Glu	gcc Ala 90	act Thr	cgc Arg	acg Thr	ggc Gly	aca Thr 95	tac Tyr	acg Thr	tgc Cys	agc Ser	aac Asn 100	agc Ser	aat Asn	Gly ggc	ctc Leu	340
acg Thr 105	agt Ser	tct Ser	att Ile	tac Tyr	gtg Val 110	ttt Phe	gtt Val	aga Arg	gat Asp	cct Pro 115	gcc Ala	aaa Lys	ctt Leu	ttc Phe	ctg Leu 120	388
gtt Val	ggc Gly	ctt Leu	ccc Pro	ttg Leu 125	ttt Phe	ggc Gly	aaa Lys	gaa Glu	gac Asp 130	agc Ser	gac Asp	gcg Ala	ctg Leu	gtc Val 135	cgc Arg	436
tgc Cys	cct Pro	ctg Leu	aca Thr 140	gac Asp	cca Pro	cag Gln	gtg Val	tcc Ser 145	aat Asn	tat Tyr	tcc Ser	ctc Leu	atc Ile 150	gag Glu	tgt Cys	484
gat Asp	gjå aaa	aaa Lys 155	tct Ser	ctc Leu	ccc Pro	acg Thr	gac Asp 160	ctg Leu	acg Thr	ttt Phe	gtc Val	cca Pro 165	aac Asn	ccc Pro	aag Lys	532
gct Ala	ggc Gly 170	atc Ile	acc Thr	atc Ile	aaa Lys	aac Asn 175	gtg Val	aag Lys	cgc Arg	gcc Ala	tac Tyr 180	cac His	cgg Arg	ctc Leu	tgt Cys	580
gtc Val 185	Arg	tgt Cys	gct Ala	gct Ala	cag Gln 190	cgt Arg	gac Asp	ggt Gly	aca Thr	tgg Trp 195	ctg Leu	cat His	tct Ser	gac Asp	aaa Lys 200	628
ttc Phe	acc Thr	ctc Leu	aaa Lys	gtg Val 205	cgg Arg	gaa Glu	gcc Ala	atc Ile	aag Lys 210	gct Ala	atc Ile	cct Pro	gtt Val	gtg Val 215	tct Ser	676
gtg Val	cct	gaa Glu	aca Thr 220	Ser	cac His	ctc Leu	ctt Leu	aag Lys 225	Lys	Gly aaa	gac Asp	aca Thr	ttt Phe 230	Thr	gtg Val	724
gtg Val	tgc Cys	acc Thr 235	Ile	aaa Lys	gat Asp	gtg Val	tct Ser 240	Thr	tcc Ser	gtg Val	aac Asn	tcc Ser 245	Met	tgg Trp	cta Leu	772
aag Lys	atg Met 250	Asn	cct Pro	cag Gln	cct Pro	cag Gln 255	His	ata Ile	gcc Ala	cag Gln	gta Val 260	. Lys	cac His	aat Asn	agc Ser	820
tgg Trp 265	His	cgg Arg	ggt Gly	gac Asp	ttc Phe 270	Asn	tat Tyr	gaa Glu	cgc Arg	cag Gln 275	Glu	g acc	ctg Lev	act Thr	atc Ile 280	. 868
ago Sei	tcg Ser	gca Ala	aga Arg	gtt Val 285	. Asp	gat Asp	tct Ser	gga Gly	gtg Val 290	. Phe	ato Met	g tgt Cys	tat Tyr	gcc Ala 295	aat Asn	916
aat Ası	act Thi	ttt Phe	gga Gly 300	, Ser	gca Ala	aat Asn	gto Val	aca Thi	r Thr	aco Thr	tto Lev	g aaa 1 Lys	a gta Val 310	. vaı	gaa Glu	964
aaa Lys	a Gly	tto Phe 315	≥ Ile	e aac	ato n Ile	tcc Ser	cct Pro 320	va:	g aag l Lys	g aad s Asi	c act	t acar Thi 325	r Val	a ttt l Phe	gta Val	1012
aco Thi	c gat Asp 330	Gly	a gaa y Glu	a aad 1 Asi	gta n Val	a gat Asp 335) Let	g gti ı Val	t gtt l Val	gaa LGl	a tac 1 Ty: 34	r Glu	g gco	c tac a Tyi	c ccc Pro	1060

aaa (Lys :	ccc Pro	gag Glu	cac His	cag Gln	cag Gln 350	tgg Trp	ata Ile	tat Tyr	atg Met	aac Asn 355	agg Arg	acc Thr	tcg Ser	gct Ala	aac Asn 360	1108
aaa Lys	gjå aaa	aag Lys	gat Asp	tat Tyr 365	gtc Val	aaa Lys	tct Ser	gat Asp	aac Asn 370	aaa Lys	agc Ser	aac Asn	atc Ile	aga Arg 375	tat Tyr	1156
gtg Val	aac Asn	caa Gln	ctt Leu 380	cgc Arg	ctg Leu	acc Thr	aga Arg	tta Leu 385	aaa Lys	ggc Gly	aca Thr	gaa Glu	gga Gly 390	ggc Gly	act Thr	1204
tat Tyr	acc Thr	ttt Phe 395	ctg Leu	gtg Val	tcc Ser	aac Asn	tct Ser 400	gat Asp	gcc Ala	agt Ser	gct Ala	tcc Ser 405	gtg Val	aca Thr	ttc Phe	1252
aac Asn	gtt Val 410	tac Tyr	gtg Val	aac Asn	aca Thr	aaa Lys 415	cca Pro	gaa Glu	atc Ile	ctg Leu	acg Thr 420	tac Tyr	gac Asp	agg Arg	ctc Leu	1300
ata Ile 425	aat Asn	ggc Gly	atg Met	ctc Leu	cag Gln 430	tgt Cys	gtg Val	gca Ala	gag Glu	gga Gly 435	ttc Phe	ccg Pro	gag Glu	ccc Pro	aca Thr 440	1348
ata Ile	gat Asp	tgg Trp	tat Tyr	ttt Phe 445	Cys	aca Thr	gga Gly	gca Ala	gag Glu 450	GIn	agg Arg	tgt Cys	acc Thr	act Thr 455	PIU	1396
gtc Val	tca Ser	cca	gtg Val 460	Asp	gta Val	cag Gln	gtc Val	cag Gln 465	Asn	gta Val	tct Ser	gtg Val	tca Ser 470	PIC	ttt Phe	1444
gga Gly	aaa Lys	cto Lev	ı Val	gtt Val	cag Gln	agt Ser	tcc Ser 480	. TTE	gac Asp	tcc Ser	ago Ser	gtc Val 485	PHE	arg	cac His	1492
aac Asn	ggc Gly 490	Th	g gtg r Val	g gag L Glu	g tgt 1 Cys	aag Lys 495	Ala	tco Ser	aac Asr	gat Asp	gtg Val	г стх	aag Lys	g agt s Sei	tcc Ser	1540
gcc Ala 505	Phe	tt Pho	t aad e Asi	c ttt n Phe	gca Ala 510	a Phe	aaa Lys	a gag s Glu	g caa ı Glı	a ato n Ile 515	9 GT1	g gcc n Ala	cac His	act	c ctg Leu 520	1588
ttc Phe	acq Thi	g cc	g cto	g cto Let 52!	ı Ile	= ggq	tti Phe	z gto e Val	g gto l Val 530	I AT	a gc	t ggo a Gly	gcg Ala	a Me 53	g ggg	1636
ato Ile	e att	t gt e Va	g ate 1 Me 54	t Va	g cto l Le	c acc	tae r Ty	c aa r Ly: 54	s Ty	t ttg r Le	g ca u Gl	g aaa n Lys	e ccc s Pro 550) Me	g tat t Tyr	1684
gaa Gli	a gta	a ca 1 Gl 55	n Tr	g aa p Ly	g gt s Va	t gte l Va	c ga l Gl 56	u GI	g at u Il	a aa e As	t gg n Gl	a aad y Asi 56!	ı Ası	t ta n Ty	t gtt r Val	1732
tac Ty	c at r Il 57	e As	c cc p Pr	g ac o Th	g ca r Gl	a ct n Le 57	u Pr	t ta o Ty	t ga r As	t ca p Hi	c aa s Ly 58	s Tr	g gaq p Gl	g tt u Ph	t ccc e Pro	1780
aga Arg 58	g As	c ag n Ar	g ct g Le	g ag u Se	t tt r Ph 59	e Gl	а аа у Ьу	g ac	a tt r Le	g gg u Gl 59	у Ал	t gg .a Gl	t gc y Al	c tt a Ph	c ggg e Gly 600	1828

aag Lys	gtc Val	gtt Val	Glu	gcc Ala 605	act Thr	gca Ala	tat Tyr	ggc	ttg Leu 610	att Ile	aag Lys	tcg Ser	gat Asp	gct Ala 615	gcc Ala	1876
atg Met	aca Thr	gtt Val	gcc Ala 620	gtg Val	aag Lys	atg Met	ctc Leu	aaa Lys 625	cca Pro	agt Ser	gcc Ala	cat His	tta Leu 630	aca Thr	gaa Glu	1924
aga Arg	gag Glu	gcc Ala 635	cta Leu	atg Met	tcg Ser	gaa Glu	ctg Leu 640	aag Lys	gtc Val	ctg Leu	agc Ser	tac Tyr 645	ctg Leu	ggc Gly	aat Asn	1972
cac His	atg Met 650	aat Asn	att Ile	gtg Val	aac Asn	ctg Leu 655	ctt Leu	ggc Gly	gca Ala	tgc Cys	acg Thr 660	gtg Val	gga Gly	Gly aaa	ccc Pro	2020
acc Thr 665	ctg Leu	gtc Val	att Ile	aca Thr	gaa Glu 670	tat Tyr	tgt Cys	tgc Cys	tat Tyr	ggt Gly 675	gat Asp	ctt Leu	ttg Leu	aat Asn	ttt Phe 680	2068
ttg Leu	aga Arg	agg Arg	aag Lys	cgt Arg 685	gac Asp	tcg Ser	ttt Phe	att Ile	ttc Phe 690	tca Ser	aag Lys	caa Gln	gaa Glu	gag Glu 695	cag Gln	2116
gca Ala	gaa Glu	gcg Ala	gca Ala 700	ctt Leu	tat Tyr	aag Lys	aac Asn	ctt Leu 705	ctg Leu	cac His	tca Ser	acg Thr	gag Glu 710	cct Pro	tcc Ser	2164
tgt Cys	gac Asp	agt Ser 715	Ser	aat Asn	gaa Glu	tat Tyr	atg Met 720	gac Asp	atg Met	aag Lys	cct Pro	ggc Gly 725	gtt Val	tcc Ser	tac Tyr	2212
gt <u>c</u> Val	gtg Val 730	Pro	acc Thr	aag Lys	aca Thr	gac Asp 735	Lys	agg Arg	aga Arg	tcc Ser	gca Ala 740	aga Arg	ata Ile	gac Asp	tcg Ser	2260
tac Tyr 745	: Ile	gaa Glu	aga Arg	gac Asp	gtg Val 750	Thr	cct Pro	gco Ala	ato Ile	atg Met 755	Glu	gat Asp	gac Asp	gag Glu	ctg Leu 760	2308
gct Ala	t ctg a Lev	gac Asp	ctg Lev	gat Asp 765	Asp	ttg Lev	ctg Lev	ago Ser	tto Phe	: Ser	tac Tyr	cag Gln	gtg Val	geo Ala 775	aag Lys	2356
gc	g atg a Met	g gcg	tto Phe 780	e Leu	gco Ala	tco Ser	aag Lys	g aat s Asr 785	ı Cys	att Ile	cac His	aga S Arg	gat Asp 790) Tier	gca Ala	2404
gc	agg a Arg	g aat g Asi 79!	ı Ile	c cto e Lei	c cto 1 Leu	e act ı Thı	cac His	3 Gl	g cgg / Arg	g ato g Ile	aca Thi	a aag r Lys 805	TTE	tgo Cys	gat Asp	2452
tt. Ph	c ggg e Gly 810	y Le	a gco ı Ala	aga Arg	a gad g Asp	2 ato 5 Ile 81	e Arg	g aat g Ası	gat n Asy	tc Sei	g aat Asi 82	n Tyr	gto Val	g gto L Val	c aaa L Lys	2500
99 Gl 82	y Ası	t gca	a cga a Arg	a cto g Leo	g cco u Pro 830	o Va	g aag l Lys	g tgg s Trj	g ato p Mei	g gca t Ala 83	a Pr	a gag o Gli	g ago	c att	t ttc e Phe 840	2548 -
ag Se	c tg r Cy	c gte s Va	g ta l Ty:	c acer Th	r Ph	t ga e Gl	a ag u Se:	t gar r Asj	t gte p Vai 85	l Trj	g tc p Se	c tat r Ty	gg:	g ati y Ilo 85	t ttc e Phe 5	2596

ctc tgg gag ctc ttc tcc tta gga agc agc ccc tac cca ggg atg ccg Leu Trp Glu Leu Phe Ser Leu Gly Ser Ser Pro Tyr Pro Gly Met Pro 860 865 870	2644
gtc gac tcc aag ttc tac aag atg atc aag gaa ggc ttc cgg atg gtc Val Asp Ser Lys Phe Tyr Lys Met Ile Lys Glu Gly Phe Arg Met Val 875 880 885	2692
agc ccg gag cac gcg cct gcc gaa atg tat gac gtc atg aag act tgc Ser Pro Glu His Ala Pro Ala Glu Met Tyr Asp Val Met Lys Thr Cys 890 . 895 900	2740
tgg gac gct gac ccc ttg aaa agg cca aca ttc aag cag gtt gtc caa Trp Asp Ala Asp Pro Leu Lys Arg Pro Thr Phe Lys Gln Val Val Gln 905 910 915 920	2788
ctt att gag aag cag atc tcg gac agc acc aag cac att tac tcc aac Leu Ile Glu Lys Gln Ile Ser Asp Ser Thr Lys His Ile Tyr Ser Asn 925 930 935	2836
ttg gca aac tgc aac ccc aac cca gag aac ccc gtg gtg gtg gac cat Leu Ala Asn Cys Asn Pro Asn Pro Glu Asn Pro Val Val Asp His 940 945 950	2884
tcc gtg agg gtc aac tcg gtg ggc agc agc gcc tct tct acg cag ccc Ser Val Arg Val Asn Ser Val Gly Ser Ser Ala Ser Ser Thr Gln Pro 955 960 965	2932
ctg ctc gtg cac gaa gat gcc tga gcagaaaccc aagtccaaca ggctttgctg Leu Leu Val His Glu Asp Ala 970 975	2986
ctgtctccga ccccgtcctt ctggcttctg tgatggttac ttggtttccc tttgacttc	gc 3046
atcetattee agggtagega gtteeceace ecacetecaa ecceactgtg atteegeet	
tacgagcaca cactttagtg gccgatggct tttcttttct	
tgcgaaggtc cgaactgtat gtatatattt tcccaatagc aaagtagctc ctactgta	
cagaaggact ceteetgett tagaggagaa gggaagggeg gggtgaaaet ggatgeee	ag 3286
agttettece ecagtgetee cetgagtgta tttgaaaagt atggecagta gtteaett	ga 3346
agaatagatg tagtcccatt tggccctgag agccatcctt aatgatggga gatatatg	ta 3406
gcaagactag aaagccaagc cctttgtgta gaaagcagac cattcttaga acagaggg	ca 3466
acggggcatc ggaagtctgg tcacgctaag aagaccgagg ctgagaagga acaagcca	.gg 3526
ggaagegtga acaatgatge tetgetetgg getgeegete gggettetgt acaactga	.cc 3586
tggtttetea gtaetttget gtetgggagt ageattggaa teaaggeete eteectag	tc 3646
agcctttgta tatactcatc tatacgttgt atgcgttcat actttggagg agggattt	.cc 3706
cacaagettt egtttetgtg tacageeetg gattagaeet aetgtgtgta agaataga	att 3766
aagagccata catatttgaa ggaaacagtt aaatgttttt tggttgtggt tgttgttg	gtt 3826
gttgttttaa agaaaaaaat gtatatgcta agcacaatct ttataagacc tcttagco	caa 3886
catacttgct ctgtctacac ttcggaacaa gccttccatg tcagagtggc tttgcag	gca 3946

```
ggagaactga ggctgtttga aaaggttacc acaggatgga gaaaacagtg cagtcctggt
                                                                     4006
ttggattctc acatagcagg gagcacaagt taaactcgac cttttatagg cacgtcccgg
                                                                     4066
acatcgggcc tgtatctatt caagtgtgta tgtgtgtgca tgcgtgtgtc tatgcgtgtg
                                                                     4126
ggtgagttgt gttgggaaac ttgccctgca tccctgaggg tcctccttca ggacccaaga
                                                                     4186
cgtaacagct tctgtcaccg ctcctgtctc tccagtttcc ctgcatgtcg ctcactgtct
                                                                     4246
agaatttact caaagccgcc acagaggctt agcggagtga agtgccgaag gacctcttta
                                                                     4306
tttggagtcc tcctgtattt aacaacactc ttatcgtaga cccattcatt agaccttatg
                                                                     4366
 taatgctgcc aatccaggga aacagattta aagtgtaccc cgtagacagg gcccagaggt
                                                                     4426
 tecettgtee ttgeeeteee ceacaceace catgateact gtecaacata aagggtteag
                                                                      4486
 tgtgttacgt ggtcatgtgt tgtccttaca ggattcaggt atgttgcctt cacggttttc
                                                                      4546
 cccaccccct cctgcccttt atcctttagg ccgtgtggcc atgaacctgg aagaagtgat
                                                                      4606
 cgtttcgact tgagtgctac actcttgcac ctttccaaag taagctggtt tggaggtcct
                                                                      4666
 gtggtcatgt acgagactgt caccagttac cgcgctctgt ttgaaacatg tctttgtatt
                                                                      4726
 cctaatgact tcagttagag taaggagaat agctgttaat atggatgtca ggtacttaag
                                                                      4786
 gggccacacc attgagaatt ttgtcttgga tattcttgaa agtttatatt tttataattt
                                                                      4846
 tttttacatc agatgtcaga tgtttctttc agttgcttga tgtttggaat tattatgtgg
                                                                      4905 ·
  ctttttttgt aaatattgaa atgtagcaat aatgtctttt gaatattcct gagcccatga
                                                                       4966
  gtccctgaaa atattttta tatatacagt aactttatgt gtaaataata cgctgtgcaa
                                                                       5026 %
  gtttaaacat gtcacgttac atgtgggttt tttctgatat gttgtccaac tgttgacagt
                                                                       5086 💡
  tctgaagaat tctaataaaa atgtaaatat ataaatcaaa aaaaaa
                                                                       5132
```

```
<210> 4
<211> 975
<212> PRT
<213> Mus musculus
<220>
<221> sig_peptide
<222> (1)..(21)
```

<400> 4

Met Arg Gly Ala Arg Gly Ala Trp Asp Leu Leu Cys Val Leu Leu Val 1 5

Leu Leu Arg Gly Gln Thr Ala Thr Ser Gln Pro Ser Ala Ser Pro Gly 20 25 30

Glu Pro Ser Pro Pro Ser Ile His Pro Ala Gln Ser Glu Leu Ile Val 35 40 45 Glu Ala Gly Asp Thr Leu Ser Leu Thr Cys Ile Asp Pro Asp Phe Val

- Arg Trp Thr Phe Lys Thr Tyr Phe Asn Glu Met Val Glu Asn Lys Lys 65 70 75 80
- Asn Glu Trp Ile Gln Glu Lys Ala Glu Ala Thr Arg Thr Gly Thr Tyr 85 90 95
- Thr Cys Ser Asn Ser Asn Gly Leu Thr Ser Ser Ile Tyr Val Phe Val
- Arg Asp Pro Ala Lys Leu Phe Leu Val Gly Leu Pro Leu Phe Gly Lys 115 120 125
- Glu Asp Ser Asp Ala Leu Val Arg Cys Pro Leu Thr Asp Pro Gln Val. 130 140
- Ser Asn Tyr Ser Leu Ile Glu Cys Asp Gly Lys Ser Leu Pro Thr Asp 145 150 155 160
- Leu Thr Phe Val Pro Asn Pro Lys Ala Gly Ile Thr Ile Lys Asn Val 165 170 175
- Lys Arg Ala Tyr His Arg Leu Cys Val Arg Cys Ala Ala Gln Arg Asp 180 185 190
- Gly Thr Trp Leu His Ser Asp Lys Phe Thr Leu Lys Val Arg Glu Ala 195 200 205
- Ile Lys Ala Ile Pro Val Val Ser Val Pro Glu Thr Ser His Leu Leu 210 215 220
- Lys Lys Gly Asp Thr Phe Thr Val Val Cys Thr Ile Lys Asp Val Ser 225 230 235
- Thr Ser Val Asn Ser Met Trp Leu Lys Met Asn Pro Gln Pro Gln His 245 250 255
- Ile Ala Gln Val Lys His Asn Ser Trp His Arg Gly Asp Phe Asn Tyr 260 265 270
- Glu Arg Gln Glu Thr Leu Thr Ile Ser Ser Ala Arg Val Asp Asp Ser 275 280 285
- Gly Val Phe Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val 290 295 300

Thr Thr Leu Lys Val Val Glu Lys Gly Phe Ile Asn Ile Ser Pro 305 310 315

- Val Lys Asn Thr Thr Val Phe Val Thr Asp Gly Glu Asn Val Asp Leu 325 330 335
- Val Val Glu Tyr Glu Ala Tyr Pro Lys Pro Glu His Gln Gln Trp Ile 340 345 350
- Tyr Met Asn Arg Thr Ser Ala Asn Lys Gly Lys Asp Tyr Val Lys Ser 355 360 365
- Asp Asn Lys Ser Asn Ile Arg Tyr Val Asn Gln Leu Arg Leu Thr Arg 370 380
- Leu Lys Gly Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser 385 390 395
- Asp Ala Ser Ala Ser Val Thr Phe Asn Val Tyr Val Asn Thr Lys Pro 405 410 415
- Glu Ile Leu Thr Tyr Asp Arg Leu Ile Asn Gly Met Leu Gln Cys Val 420 425 430
- Ala Glu Gly Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Thr Gly
 435 440 445
- Ala Glu Gln Arg Cys Thr Thr Pro Val Ser Pro Val Asp Val Gln Val 450 455 460
- Gln Asn Val Ser Val Ser Pro Phe Gly Lys Leu Val Val Gln Ser Ser 465 470 475 480
- Ile Asp Ser Ser Val Phe Arg His Asn Gly Thr Val Glu Cys Lys Ala 485 490 495
- Ser Asn Asp Val Gly Lys Ser Ser Ala Phe Phe Asn Phe Ala Phe Lys 500 505
- Glu Gln Ile Gln Ala His Thr Leu Phe Thr Pro Leu Leu Ile Gly Phe 515 520 525
- Val Val Ala Ala Gly Ala Met Gly Ile Ile Val Met Val Leu Thr Tyr 530 540
- Lys Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys Val Val Glu 545 555 555

Glu Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr Gln Leu Pro 565 570 575

- Tyr Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser Phe Gly Lys 580 585 590
- Thr Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala Thr Ala Tyr 595 600 605
- Gly Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val Lys Met Leu 610 620
- Lys Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met Ser Glu Leu 625 630 635 640
- Lys Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val Asn Leu Leu 645 650 655
- Gly Ala Cys Thr Val Gly Gly Pro Thr Leu Val Ile Thr Glu Tyr Cys 660 665 670
- Cys Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg Asp Ser Phe 675 680 685
- Ile Phe Ser Lys Gln Glu Glu Gln Ala Glu Ala Ala Leu Tyr Lys Asn 690 695 700
- Leu Leu His Ser Thr Glu Pro Ser Cys Asp Ser Ser Asn Glu Tyr Met 705 710 715 720
- Asp Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys Thr Asp Lys 725 730 735
- Arg Arg Ser Ala Arg Ile Asp Ser Tyr Ile Glu Arg Asp Val Thr Pro
 740 745 750
- Ala Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Asp Asp Leu Leu 755 760 765
- Ser Phe Ser Tyr Gln Val Ala Lys Ala Met Ala Phe Leu Ala Ser Lys 770 775 780
- Asn Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Leu Thr His 785 790 795 800
- Gly Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Arg 805 810 815

Asn	Asp	Ser	Asn 820	Tyr	Val	Val	Lys	Gly 825	Asn	Ala	Arg	Leu	Pro 830	Val	Lys	
Trp	Met	Ala 835	Pro	Glu	Ser	Ile	Phe 840	Ser	Cys	Val	Tyr'	Thr 845	Phe	Glu	Ser	
Asp	Val 850	Trp	Ser	Tyr	Gly	Ile 855	Phe	Leu	Trp	Glu	Leu 860	Phe	Ser	Leu	Gly	
Ser 865	Ser	Pro	Tyr	Pro	Gly 870	Met	Pro	Val	Asp	Ser 875	Lys	Phe	Tyr	Lуs	Met 880	
Ile	Lys	Glu	Gly	Phe 885	Arg	Met	Val	Ser	Pro 890	Glu	His	Ala	Pro	Ala 895	Glu	
Met	Tyr	Asp	Val 900	Met	Lys	Thr	Сув	Trp 905	Asp	Ala	Asp	Pro	Leu 910	Lys	Arg	
Pro	Thr	Phe 915	Lys	Gln	Val	Val '	Gln 920	Leu	Ile	Glu	Lys	Gln 925	Ile	Ser	Asp	
Ser	Thr 930	Lys	His	Ile	Tyr	Ser 935	Asn	Leu	Ala	Asn	Cys 940	Asn	Pro	Asn	Pro	
Glu 945	Asn	Pro	Val	Val	Val 950	Asp	His	Ser	Val	Arg 955	Val	Asn	Ser	Val	Gly 960	
Ser	Ser	Ala	Ser	Ser 965	Thr	Gln	Pro	Leu	Leu 970	Val	His	Glu	Asp	Ala 975		
<210 <210 <210 <210	1> : 2> I	5 3816 DNA Ratti	ıs no	orve	gicus	3										
<22 <22 <22	L> (CDS (45)	(2	981)												
<400 gct		5 cag a	agaga	agga	gc to	cagag	gteta	a gc	gcagu	ccac	cgcg				c gct y Ala	56
cgc Arg 5	ggc Gly	gcc Ala	tgg Trp	gat Asp	ctg Leu 10	ctc Leu	tgc Cys	gtç Val	ctg Leu	ttg Leu 15	gtc Val	ctg Leu	ctc Leu	cgt Arg	ggc Gly 20	104
cag Gln	aca Thr	gly aaa	act Thr	tct Ser 25	cag Gln	cca Pro	tct Ser	gcg Ala	agt Ser 30	cca Pro	gly ggg	gag Glu	ccg Pro	tct Ser 35	cca Pro	152

			gcc Ala							200
			tgc Cys							248
			agg Arg							296
			act Thr 90							344
			tct Ser							392
			ctt Leu							440
			ctg Leu							488
			aaa Lys							536
	_	_	 atc Ile 170			 _	_	_		584
			tgt Cys							632 [^]
			ctc Leu							680
			gaa Glu							728
			acc Thr							776
			aac Asn 250							824
			cag Gln							872
			gca Ala							920

tat Tyr	gcc Ala	aat Asn 295	aat Asn	act Thr	ttt Phe	gga Gly	tca Ser 300	gca Ala	aat Asn	gtc Val	aca Thr	aca Thr 305	acc Thr	ttg Leu	aaa Lys	968	
gta Val	gta Val 310	gaa Glu	aag Lys	gga Gly	ttc Phe	atc Ile 315	aac Asn	atc Ile	ttc Phe	cct Pro	gtg Val 320	aag Lys	aac Asn	act Thr	acg Thr	1016	
gta Val 325	ttt Phe	gta Val	act Thr	gat Asp	330 Gly 399	gaa Glu	aat Asn	gta Val	gac Asp	ttg Leu 335	gtt Val	gtt Val	gag Glu	ttc Phe	gag Glu 340	1064	
gcc Ala	tac Tyr	cct Pro	aaa Lys	cct Pro 345	gaa Glu	cac His	cag Gln	cag Gln	tgg Trp 350	atc Ile	tac Tyr	atg Met	aac Asn	agg Arg 355	acg Thr	1112	
cct Pro	act Thr	aac Asn	aga Arg 360	Gly 999	gag Glu	gat Asp	tat Tyr	gtc Val 365	aaa Lys	tcc Ser	gac Asp	aac Asn	caa Gln 370	agc Ser	aac Asn	1160	
atc Ile	aga Arg	tat Tyr 375	gtg Val	aac Asn	gaa Glu	ctt Leu	cgc Arg 380	ctg Leu	acc Thr	aga Arg	ttg Leu	aaa Lys 385	ggc Gly	aca Thr	gaa Glu	1208	
gga Gly	ggc Gly 390	act Thr	tac Tyr	acc Thr	ttt Phe	ctg Leu 395	gtg Val	tcc Ser	aac Asn	tct Ser	gat Asp 400	gtc Val	agt Ser	gct Ala	tcc Ser	1256	
gtg Val 405	aca Thr	ttt Phe	gat Asp	gtt Val	tat Tyr 410	gtg Val	aac Asn	aca Thr	aaa Lys	cca Pro 415	gaa Glu	atc Ile	ctg Leu	aca Thr	tat Tyr 420	1304	•
gac Asp	agg Arg	ctc Leu	atg Met	aat Asn 425	ggc Gly	agg Arg	ctc Leu	cag Gln	tgt Cys 430	gtg Val	gcg Ala	gcg Ala	gga Gly	t.t.c Phe 435	ccg: Pro-	1352	,
gag Glu	ccc Pro	aca Thr	ata Ile 440	gat Asp	tgg Trp	tat Tyr	ttt Phe	tgt Cys 445	aca Thr	gly aaa	gca Ala	gag Glu	caa Gln 450	Arg	tgt Cys	1400	pr.
acc Thr	gtt Val	cct Pro 455	Val	ccg Pro	cca Pro	gta Val	gac Asp 460	Val	cag Gln	atc Ile	cag Gln	aat Asn 465	Ala	tct Ser	gtg Val	1448	
tca Ser	cca Pro 470	Phe	gga Gly	aaa Lys	ctg Leu	gtg Val 475	gtt Val	cag Gln	agt Ser	tcc Ser	ata Ile 480	gac Asp	tcc Ser	agc Ser	gtc Val	1496	ı
ttc Phe 485	Arg	cac His	aac Asn	ggc Gly	acg Thr 490	Val	gag Gl.u	tgt Cys	aag Lys	gcc Ala 495	Ser	aac Asn	gct Ala	gtg Val	ggc Gly 500	1544	:
aag Lys	agc Ser	tct Ser	gcc Ala	ttc Phe 505	Phe	aac Asn	ttt Phe	gca Ala	ttt Phe 510	Lys	ggt	aac Asn	ago Ser	aaa Lys 515	gag Glu	1592	
caa Gln	ato Ile	cag Gln	Pro 520	His	acc Thr	ctg Leu	ttc Phe	acg Thr 525	Pro	ctg Leu	cto Leu	att Ile	ggd Gly 530	Phe	gtg Val	1640	,
gto Val	aca Thr	gcc Ala 535	Gly	ttg Leu	atg Met	. Gly	ato Ile 540	: Ile	gtg Val	atg Met	gtt Val	ctt Leu 545	Ala	tac Tyr	aaa Lys	1688	ţ

tat Tyr	ttg Leu 550	GIL	aaa Lys	ccc Pro	ato Met	tat Tyr 555	Glu	gta Val	caa Gln	tgg Trp	aac Lys 560	: Val	gto Val	gag Glu	gag Glu	1736
ata Ile 565	Asn	Gly ggg	aac Asn	aat Asn	tat Tyr 570	Val	tac Tyr	ata Ile	gac Asp	cca Pro 575	Thr	cag Gln	ctt Leu	cct Pro	tat Tyr 580	1784
gac Asp	Cac His	aaa Lys	tgg Trp	gag Glu 585	Pne	ccc Pro	aga Arg	aac Asn	agg Arg 590	ctg Leu	agt Ser	ttt Phe	gga Gly	aag Lys 595	acc Thr	1832
ttg Leu	gga Gly	gct Ala	ggt Gly 600	gcc Ala	ttt Phe	gly	aag Lys	gta Val 605	Val	gag Glu	gcc Ala	act Thr	gcc Ala 610	Tyr	Gly	1880
tta Leu	att Ile	aag Lys 615	ser	gat Asp	gcc Ala	gcc Ala	atg Met 620	acg Thr	gtt Val	gcc Ala	gtg Val	aag Lys 625	Met	ctc Leu	aaa Lys	1928
cca Pro	agt Ser 630	Ala	cat His	tta Leu	acg Thr	gaa Glu 635	agg Arg	gag Glu	gcc Ala	cta Leu	atg Met 640	tca Ser	gaa Glu	ctg Leu	aag Lys	1976
gtc Val 645	ctg Leu	agc Ser	tac Tyr	ctg Leu	ggt Gly 650	aat Asn	cac His	atg Met	aat Asn	atc Ile 655	gtc Val	aac Asn	ctc Leu	ctt Leu	gga Gly 660	2024
gcg Ala	tgt Cys	acc Thr	gtg Val	gga Gly 665	gly aaa	ccc Pro	acc Thr	ctg Leu	gtc Val 670	att Ile	aca Thr	gaa Glu	tac Tyr	tgt Cys 675	tgc Cys	2072
tat Tyr	ggt Gly	gat Asp	ctt Leu 680	ttg Leu	aat Asn	ttc Phe	ttg Leu	aga Arg 685	aga Arg	aag Lys	cgt Arg	gac Asp	tcg Ser 690	ttt Phe	att Ile	2120
ttc Phe	tca Ser	aag Lys 695	caa Gln	gaa Glu	gaa Glu	cag Gln	gca Ala 700	gac Asp	gcc Ala	gca Ala	ctt Leu	tat Tyr 705	aag Lys	aac Asn	ctt Leu	2168:
ctg Leu	cat His 710	tca Ser	aag Lys	gag Glu	tct Ser	tcc Ser 715	tgt Cys	gac Asp	agc Ser	tca Ser	aac Asn 720	gag Glu	tac Tyr	atg Met	gac Asp	2216
atg Met 725	aag Lys	cct Pro	Gly	gtt Val	tcc Ser 730	tac Tyr	gtc Val	gta Val	cca Pro	acc Thr 735	Lys	aca Thr	gac Asp	aaa Lys	agg Arg 740	2264
aga Arg	tcc Ser	gca Ala	aga Arg	ata Ile 745	gac Asp	tcg Ser	tat Tyr	ata Ile	gaa Glu 750	aga Arg	gac Asp	gtg Val	act Thr	ccc Pro 755	gcc Ala	2312
atc Ile	atg Met	gaa Glu	gat Asp 760	gac Asp	gag Glu	ctg Leu	gct Ala	ctg Leu 765	gac Asp	ctg Leu	gaa Glu	gat Asp	ttg Leu 770	ctg Leu	agc Ser	2360
ttt Phe	tcc Ser	tac Tyr 775	cag Gln	gtg Val	gcc Ala	aag Lys	ggc Gly 780	atg Met	gcg Ala	ttc Phe	ctc Leu	gcc Ala 785	tcc Ser	aag Lys	aac Asn	2408 :
tgt Cys	att Ile 790	cac His	aga Arg	gat Asp	ttg Leu	gca Ala 795	gcc Ala	agg Arg	aat Asn	Ile	ctc Leu 800	ctc Leu	act Thr	cac His	gly aaa	2456

cgg atc aca aag att tgc gat ttc ggc cta gcc aga gac atc agg aat Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg Asp Ile Arg Asn 805 810 815 820	2504
gat tcg aat tac gtg gta aaa gga aat gca cgg ctg ccc gtg aag tgg Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu Pro Val Lys Trp 825 830 835	2552
atg gca ccg gag agc att ttc aac tgc gtg tac aca ttt gaa agt gac Met Ala Pro Glu Ser Ile Phe Asn Cys Val Tyr Thr Phe Glu Ser Asp 840 845 850	2600
gtc tgg tcc tat ggg att ttc ctc tgg gag cta ttc tct cta gga agc Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe Ser Leu Gly Ser 855 860 865	2648
agc ccc tac cca ggg atg ccg gtc gat tcc aag ttt tac aag atg atc Ser Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe Tyr Lys Met Ile 870 875 880	2696
aag gaa ggt ttc cga atg ctc agc cct gag cac gcg cct gcc gca atg Lys Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala Pro Ala Ala Met 885 890 895 900	2744
tat gaa gtt atg aag act tgc tgg gat gct gat ccc ctg aaa agg cca Tyr Glu Val Met Lys Thr Cys Trp Asp Ala Asp Pro Leu Lys Arg Pro 905 910 915	2792
aca ttc aag cag gtt gtt cag ctc att gag aag cag atc tca gac agc Thr Phe Lys Gln Val Val Gln Leu Ile Glu Lys Gln Ile Ser Asp Ser 920 925 930	2840
agc aaa cat att tac tcc aac tta gca aac tgt aac ccc aac cca gag Ser Lys His Ile Tyr Ser Asn Leu Ala Asn Cys Asn Pro Asn Pro Glu 935 940 945	2888
aac ccc gtg gtg gtg gac cat tct gtg agg gtc aat tcc gtc ggc agc Asn Pro Val Val Val Asp His Ser Val Arg Val Asn Ser Val Gly Ser 950 955 960	2936
agc acc tct tcc aca cag cct ctc ctc gtg cat gag gac gcc tga Ser Thr Ser Ser Thr Gln Pro Leu Leu Val His Glu Asp Ala 965 970 975	2981
gtagaaacgg agcccgatgg gcattgctgt ggtctccaac cccattctcc tggcttctat	3041
gatggttatt ttgtttteet ttgaettgea teetaeteea gggtageggg ateecegeee	3101
cacccccaac cccactgtga ttctgccttt tatgagcaca ctttagtggc tgatggcctt	3161
tccttttcgc catcagccac catcccacca agaaggtccg aacggtatgt atatattttc	3221
ccattagcaa agtagcccct actgtaaacg gaaggcctca tgctttagag gaggaagggt	3281
agggtgcaac ggggatgcct ggagttcttc acagtgctcc tccgagtgtg tttgaaaagt	3341
atggccagta gttcatttga agagtttaga agtagtcccg ttttggccca gagagccttc	3401
cataatgacg ggcagatgta tgtagcaaga ctagaaagga aacccaagcc ctgtgtgtgg	3461
aaagtagacc attattagaa cagaggacac atgagaacat ctaggcctaa gaagtctggt	3521
catgctgaga acgagaccta ggctgagacg gcgcaagccc tggaagcgtg gacatagatg	3581

ctctgttctg gggctgcgcg ggcttttgcg caagcttttg tacaactgac ctggttttta 3641
aatagtctgc tgttggggag tagaattgga gacaaggcct cctccctage cagcgtttgt 3701
atatactcac tgtacgttgt atgcgttcat actttggagc gggggatccc cccacaagct 3761
ttagtttctg tgtacaaccc tgggattagg tctgctgttg gtaagaatag attta 3816

- <210> 6
- <211> 978
- <212> PRT
- <213> Rattus norvegicus
- <400> 6

Met Arg Gly Ala Arg Gly Ala Trp Asp Leu Leu Cys Val Leu Leu Val 1 5 10 15

Leu Leu Arg Gly Gln Thr Gly Thr Ser Gln Pro Ser Ala Ser Pro Gly
20 25 30

Glu Pro Ser Pro Pro Ser Ile Gln Pro Ala Gln Ser Glu Leu Ile Val 35 40 45

Glu Ala Gly Asp Thr Ile Arg Leu Thr Cys Thr Asp Pro Ala Phe Val 50 60

Lys Trp Thr Phe Glu Ile Leu Asp Val Arg Ile Glu Asn Lys Gln Ser 65 70 75 80

Glu Trp Ile Arg Glu Lys Ala Glu Ala Thr His Thr Gly Lys Tyr Thr 85 90 95

Cys Val Ser Gly Ser Gly Leu Arg Ser Ser Ile Tyr Val Phe Val Arg

Asp Pro Ala Val Leu Phe Leu Val Gly Leu Pro Leu Phe Gly Lys Glu 115 120 125

Asp Asn Asp Ala Leu Val Arg Cys Pro Leu Thr Asp Pro Gln Val Ser 130 135 140

Asn Tyr Ser Leu Ile Glu Cys Asp Gly Lys Ser Leu Pro Thr Asp Leu 145 150 155 160

Lys Phe Val Pro Asn Pro Lys Ala Gly Ile Thr Ile Lys Asn Val Lys 165 170 175

Arg Ala Tyr His Arg Leu Cys Ile Arg Cys Ala Ala Gln Arg Glu Gly 180 185 190

Lys Trp Met Arg Ser Asp Lys Phe Thr Leu Lys Val Arg Ala Ala Ile 200 Lys Ala Ile Pro Val Val Ser Val Pro Glu Thr Ser His Leu Leu Lys Glu Gly Asp Thr Phe Thr Val Ile Cys Thr Ile Lys Asp Val Ser Thr 230 235 Ser Val Asp Ser Met Trp Ile Lys Leu Asn Pro Gln Pro Gln Ser Lys Ala Gln Val Lys Arg Asn Ser Trp His Gln Gly Asp Phe Asn Tyr Glu Arg Gln Glu Thr Leu Thr Ile Ser Ser Ala Arg Val Asn Asp Ser Gly Val Phe Met Cys Tyr Ala Asn Asn Thr Phe Gly Ser Ala Asn Val Thr 290 295 Thr Thr Leu Lys Val Val Glu Lys Gly Phe Ile Asn Ile Phe Pro Val 305 Lys Asn Thr Thr Val Phe Val Thr Asp Gly Glu Asn Val Asp Leu Val 325 Val Glu Phe Glu Ala Tyr Pro Lys Pro Glu His Gln Gln Trp Ile Tyr Met Asn Arg Thr Pro Thr Asn Arg Gly Glu Asp Tyr Val Lys Ser Asp 355 360 Asn Gln Ser Asn Ile Arg Tyr Val Asn Glu Leu Arg Leu Thr Arg Leu Lys Gly Thr Glu Gly Gly Thr Tyr Thr Phe Leu Val Ser Asn Ser Asp 395 Val Ser Ala Ser Val Thr Phe Asp Val Tyr Val Asn Thr Lys Pro Glu Ile Leu Thr Tyr Asp Arg Leu Met Asn Gly Arg Leu Gln Cys Val Ala 420 425 430 Ala Gly Phe Pro Glu Pro Thr Ile Asp Trp Tyr Phe Cys Thr Gly Ala 435 440

.

Glu Gln Arg Cys Thr Val Pro Val Pro Pro Val Asp Val Gln Ile Gln 450 455 460

- Asn Ala Ser Val Ser Pro Phe Gly Lys Leu Val Val Gln Ser Ser Ile 465 470 475 480
- Asp Ser Ser Val Phe Arg His Asn Gly Thr Val Glu Cys Lys Ala Ser 485 490 495
- Asn Ala Val Gly Lys Ser Ser Ala Phe Phe Asn Phe Ala Phe Lys Gly 500 505 510
- Asn Ser Lys Glu Gln Ile Gln Pro His Thr Leu Phe Thr Pro Leu Leu 515 520 525
- Ile Gly Phe Val Val Thr Ala Gly Leu Met Gly Ile Ile Val Met Val 530 540
- Leu Ala Tyr Lys Tyr Leu Gln Lys Pro Met Tyr Glu Val Gln Trp Lys 545 550 555 560
- Val Val Glu Glu Ile Asn Gly Asn Asn Tyr Val Tyr Ile Asp Pro Thr 565 570 575
- Gln Leu Pro Tyr Asp His Lys Trp Glu Phe Pro Arg Asn Arg Leu Ser 580 585 590
- Phe Gly Lys Thr Leu Gly Ala Gly Ala Phe Gly Lys Val Val Glu Ala 595 600 605
- Thr Ala Tyr Gly Leu Ile Lys Ser Asp Ala Ala Met Thr Val Ala Val 610 620
- Lys Met Leu Lys Pro Ser Ala His Leu Thr Glu Arg Glu Ala Leu Met 625 630 635 640
- Ser Glu Leu Lys Val Leu Ser Tyr Leu Gly Asn His Met Asn Ile Val 645 650 655
- Asn Leu Leu Gly Ala Cys Thr Val Gly Gly Pro Thr Leu Val Ile Thr 660 665 670
- Glu Tyr Cys Cys Tyr Gly Asp Leu Leu Asn Phe Leu Arg Arg Lys Arg 675 680 685
- Asp Ser Phe Ile Phe Ser Lys Gln Glu Glu Gln Ala Asp Ala Ala Leu 690 695 700

Tyr Lys Asn Leu Leu His Ser Lys Glu Ser Ser Cys Asp Ser Ser Asn 705 710 715 720

- Glu Tyr Met Asp Met Lys Pro Gly Val Ser Tyr Val Val Pro Thr Lys
 725 730 735
- Thr Asp Lys Arg Arg Ser Ala Arg Ile Asp Ser Tyr Ile Glu Arg Asp
 740 745 750
- Val Thr Pro Ala Ile Met Glu Asp Asp Glu Leu Ala Leu Asp Leu Glu 755 760 765
- Asp Leu Leu Ser Phe Ser Tyr Gln Val Ala Lys Gly Met Ala Phe Leu 770 780
- Ala Ser Lys Asn Cys Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu 785 790 795 800
- Leu Thr His Gly Arg Ile Thr Lys Ile Cys Asp Phe Gly Leu Ala Arg 805 810 815
- Asp Ile Arg Asn Asp Ser Asn Tyr Val Val Lys Gly Asn Ala Arg Leu 820 825 830
- Pro Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asn Cys Val Tyr Thr 835 840 845
- Phe Glu Ser Asp Val Trp Ser Tyr Gly Ile Phe Leu Trp Glu Leu Phe 850 855 860
- Ser Leu Gly Ser Ser Pro Tyr Pro Gly Met Pro Val Asp Ser Lys Phe 865 870 875 889
- Tyr Lys Met Ile Lys Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala 885 890 895
- Pro Ala Ala Met Tyr Glu Val Met Lys Thr Cys Trp Asp Ala Asp Pro 900 905 910
- Leu Lys Arg Pro Thr Phe Lys Gln Val Val Gln Leu Ile Glu Lys Gln 915 920 925
- Ile Ser Asp Ser Ser Lys His Ile Tyr Ser Asn Leu Ala Asn Cys Asn 930 935 940
- Pro Asn Pro Glu Asn Pro Val Val Val Asp His Ser Val Arg Val Asn 945 955 960

Ser Val Gly Ser Ser Thr Ser Ser Thr Gln Pro Leu Leu Val His Glu 965 970 975

Asp Ala